SHOP SAFETY

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INTRODUCTION

When working in a manufacturing atmosphere or in a shop classroom setting, it is very important that you learn to think safety. This video will summarise the types of accidents that can occur in both of these situations and explain how to prevent them. The first part of this program covers six types of accidents: fire, explosions, asphyxiation, chemical burns, electrical shock and physical injuries. You will learn the general causes of these accidents and observe the procedures to follow to prevent them. The second section of this film will explain the safety rules to follow when using several types of shop tools and machinery. Videos concerning safety can only summarise the proper rules to follow when working in a shop. It is your actual responsibility to follow these rules.

STUDENT OBJECTIVES

After viewing this video, the student will be able to:

Learn the importance of general shop safety rules.
Identify several combustible substances found in a general shop.
Properly use a fire extinguisher
Explain the procedures used to prevent shop fires
Describe the procedures used to prevent electrical shock.
Understand the importance of a power tool's "ground plug".
List several types of possible explosions that can occur in an Industrial technology lab.
Define the term *asphyxiation.*
Explain the procedures to follow to prevent physical injury to yourself and others in the shop area.
Safely use several types of tools and machinery found in a general shop.

TO THE INSTRUCTOR

This video is designed to be a valuable supplement to your curriculum. Since young people are extremely acclimated to television, it is a natural way to help present important aspects of your subject matter. This video is designed to give a detailed, yet broad coverage of the topic.

Most educators agree that it is best to use as many instructional methods as possible. Utilise quality textbooks, workbooks, videos, lectures, demonstrations, overheads, and other methods to present the technical information. This will hold interest and help pupils understand the large amount of information required to succeed in today's complex world.

This video is organised into major sections or topics. Each section covers one major segment of the subject. Graphic breaks are given between each section so that you can stop the video for class discussion, demonstrations, to answer questions, or to ask questions. This allows you to only watch a portion of the program each day or to present the complete video, depending on your curriculum requirements.

VIDEO QUIZ

Choose the most correct answer after reading the statement:

1. Who should you first notify if an accident occurs in the shop area ?
a. Your friends b. Your instructor c. The janitor d. A machinist

2. Using correct safety _____ to prevent accidents is your responsibility wherever you are working.
a. tools b. machines c. procedures d. lighting

3. You should know the location of your shop's first-aid kit and it should be stocked with _____ at all times.
a. candy b. supplies c. oxygen d. rags

4. Store gasoline and other flammables in an approved, sealed _____ .
a. vacuum b. container c. drawer d. jar

5. _____ rags can start a fire in the shop area.
a. large b. white c. oily d. clean

6. To use a fire extinguisher, remove it from the wall, pullout the safety _____ , aim the extinguisher at the flames, then squeeze its handle.
a. pin b. washer c. hose d. bolt

7. Always double check that a circuit is _____ before contacting it with your bare hands.
a. live b. conductive c. hot d. dead

8. Electric _____ can occur when using improperly grounded power tools.
a. shock b. power c. static d. resistance

9. Never use an electrical tool unless it has a _____ ground plug.
a. green b. functional c. plastic d. carbon

10. The ground plug on an electrical tool prevents _____ from accidentally passing through your body in case of a short in the tool.
a. protons b. current c. diodes d. neutrons

11. You should never work with electricity on a _____ floor.
a. brick b. concrete c. wood d. wet

12. Make sure you shut off the _____ valves on the welding tanks after they are used.
a. water b. main c. coolant d. forge

13. _____ gas is produced when an acid battery is being charged or discharged.
a. Propane b. Butane c. Acetylene d. Hydrogen

14. How should you clean metal shavings from you work project or tools?
a. Use battery acid to clean off metal shavings.
b. Use air pressure to blow off the metal shavings.
c. Use a brush to clean off the metal shavings.
d. U se a propane torch to clean off the metal shavings.

15. When forging on an anvil, make sure the base of the anvil is _____ .
a. painted b. wet c. loose d. clean

(Enlarge this page for classroom use.)

The video is designed to simplify the complex. Concise wording and carefully selected graphics are used to provide maximum learning in minimum time. Close-up shots of components and service procedures are used to make every second of viewing instructional, as if each student was standing right behind you, watching over your shoulder while you were working or giving a demonstration.

Computer animation is used to explain difficult to comprehend principles or techniques. These images show how parts work, how they fit together, or how they vary in design.

QUIZ ANSWER KEY

1. b 2. c 3. b 4. b 5. c 6. a 7. d 8. a 9. b 10. b 11. d 12. b 13. d 14. c 15. d

u se your own judgement to evaluate the definitions, short answer questions and discussion topics.

TECHNICAL TERMS

Write definitions for the following terms. Use a textbook or review the video if needed.

general shop
woodworking
chemical burns
fire extinguisher
electric shock
explosions
acetylene tank
foundry furnace
hydrogen gas
solvent
solder
flux fumes
power tools
brazing
shop air pressure tank
chisel
welding
drill press
wood lathe
mill
planer
radial arm saw
sheet metal foundry
asphyxiation
first-aid kit
combustible substances
ground plug
oxygen tank
propane bottles
acid batteries
toxic substances
grinder
acid core
respirator
acetylene cutting
kill switch
hydraulic pressure
punch
wire wheel
power hacksaw
metal lathe
band saw
joiner
molten metal

VIDEO DISCUSSION TOPICS

Here are a few topics that might be used for a class discussion:

1. Name some of the combustible substances that can be found in a general shop.

2. Why should you always note the locations of all fire extinguishers in the shop area?

3. Where should oily shop rags be stored?

4. Name the safety rules to follow when using a wood or metal lathe.

5. When should you use eye or face protection in a general shop?

6. Why should you always keep your work area and the shop floor clean?

7. What safety procedures should you follow when welding?

8. How should you protect your body from injury when using a metal foundry?

SHORT ANSWER

Briefly answer the following questions in your own words:

1. Name some of the causes of general shop fires.

2. Why is it important to keep electrical cords away from power equipment?

3. What types of explosions are possible in an industrial technology lab?

4. When should a respirator be worn in the shop area?

5. Why should you always lift heavy objects with your legs and not your back?

6. Why should you remove all jewellery when working with power equipment? ~

7. Why should you always use caution when using shop air pressure?

8. Why should you never leave scrap metal lying around in the shop area?

9. What safety precautions should be taken when using a grinder?

10. Why do most woodworking machines require the use of a push stick?